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Existential meaning in life is becoming an increasingly important measure of personal assessment. In search of a suitable instrument to measure existential meaning, the authors reviewed several measures. Eventually, they selected the Existence Scale (ES), doing so on theoretical grounds. The ES is a fairly new self-rating instrument that assesses the degree of personal search for existential meaning in life. The aim of the current study is to examine the construct validity of the ES empirically by analyzing the factor structure of the scale. Confirmatory factor analysis was applied. Inventory responses from 1,187 participants were used as the overall sample, which was based on four samples, consisting of elementary school teachers ($N = 215$), elementary school principals ($N = 514$), pastors ($N = 266$), and social workers ($N = 192$). The results show that confirmatory factor analysis did not confirm the construct validity of the ES. The ES has been developed to measure existential meaning in life. There is no evidence in the current study that the ES is a valid, and acceptable measure of existential meaning.

Keywords: Existential meaning in life; existence scale; construct validity; confirmatory factor analysis

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The will to give meaning to life has enjoyed ample attention in psychological research and practice since the nineteen sixties. Frankl's *The Search for Meaning* was published in English for the first time in 1959. In it, the author describes how he survived the Nazi concentration camps and developed logotherapy, which is based on the idea that existential meaning is fundamentally important to mental health. According to Frankl (1970), the will to impart meaning is a primary motivation for human beings. Existential meaning is not an extrapolation of personal needs or wishes, but a discovery of something essential that presents itself to man and imparts a purpose and a calling to everyone's life. Man obeys this calling by accepting responsibility for his own life. Without this essential responsibility, man lives in an 'existential vacuum'. Failure to achieve existential meaning in life may result in psychological distress (Loonstra, Brouwers, & Tomic, 2009; Ryff, 1989; Steger, 2012).

In recent years the construct of existential meaning has received renewed attention. Existential meaning is regarded as an indicator of well-being (Ryff, 1989) and promotes adaptive coping (Park & Folkman, 1997). Lent (2004) argued for examining and assessing well-being variables such as meaning of existence in order to promote personal growth and recovery. In a review of a large number of studies Steger (2012) demonstrates that people who report greater meaning in their lives also report greater well-being, lesser psychopathology, and a more beneficial experience of spirituality. According to Steger (2012) people who say they lead meaningful lives are also quite happy, satisfied with their lives and self, and experience lower levels of psychological suffering, psychopathological complaints, and disruptive behavior. It appears that existential meaning strongly influences human health and well being. Absence of meaning, on the other hand, is related to psychopathology (Yalom, 1980). Consequently, conducting empirical research in this domain is valuable and justified.

The existential scale (ES) developed by Längle and his co-workers (Kundi, Wurst, & Längle, 2003; Längle, 2003a; Längle, Orgler, & Kundi, 2003) is related to the Franklian analysis of a cultural deficit in modern times (Längle, 2003). Social cohesion has been replaced by individualism. A new feeling of uninhibited freedom brings with it cultural isolation and loss of identity. In this situation, people have to find existential motivation and fulfillment.

In the search for meaning, self-transcendence plays a central role. Self-transcendence is embedded in a theory of psychological maturity, in which an individual interacts with his environment in a balanced way. The prerequisite for self-transcendence is self-distance, the ability to distinguish oneself from the surrounding world, to refrain from becoming dependent on other persons or circumstances, and to accept things as they are. Based on this self-distance, one can transcend oneself - that is, enter into relationships with people and other objects and value them - and arrive at a fundamental feeling of harmony between the world and oneself. Self-distance and self-transcendence together form the personality factor of existential meaning. Connected with the personality factor is the existence factor, consisting of freedom and responsibility. Inner freedom is important to make decisions based on one's own conscience and not on fear. Responsibility stands for the inner determination to put one's decisions into practice.

This theoretical foundation has provided the groundwork for the ES, consisting of

46 items rated with a 6-point Likert-type scale, ranging from 'fully disagree' to 'fully agree.' The measure contains 8 items related to self-distance, 14 items related to self-transcendence, 11 items related to freedom, and 13 items related to responsibility. Examples of such items are: "A situation is interesting to me only if it meets my wishes" (self-distance); "After all there is nothing in my life to which I want to devote myself" (self-transcendence); "Without much reflection I try to put off unpleasant decisions" (freedom), and "I take too little time for important things" (responsibility).

Längle's ES has an appealing theoretical basis. The attention is focused on the psychological predisposition required for a sound life orientation. It distinguishes meaning based on self-transcendence from meaning based on self-interest and personal needs, something that other current scales, such as the purpose in life test (Crumbaugh & Maholick, 1964), the life regard inventory (Battista & Almond, 1973; Debats, 1998), and the sense of coherence scale (Antonovsky, 1987), fail to do. One can imagine that when meaning is based on self-interest, a person is more vulnerable to circumstances that do harm to his or her interests than when meaning is based on self-transcendence.

The ES can be used to evaluate whether the individual has realized the personal-existential dimension and to what extent it has been incorporated into his or her personality development. We are not aware of any scale that intends to measure human personal-existential dynamics. Längle et al. (2003) tested the ES in a sample of 1028 Austrian adults aged 18 to 69 years. The resulting 46-item scale included four factors. According to authors the scale is not only suitable for scientific purpose but also for therapeutic practice. Längle et al. (2003) examined the factorial structure of the scale using exclusively principal components analysis. However, applying this technique does not provide information about the overall fit of factorial models. There is a possibility that the factor model as proposed by Längle et al. (2003) has to be rejected after the models' fit was tested using confirmatory factor analysis. Therefore, the aim of the current study was to test the factorial validity of the ES using confirmatory factor analysis.

The ES questionnaire was not originally developed and tested in the Netherlands. Therefore, before the scale can be applied, it is customary to assess the construct validity of the scale on the basis of a representative sample of Dutch respondents. Delineation of the factor structure of an instrument can contribute substantially to the assessment of construct validity. Confirmatory factor analysis is particularly useful in that respect (Hepner & Sechrest, 2002). Because the ES was developed with an a priori hypothesis of the relationship among its items, construct validity investigations should use confirmatory factor analysis (see Atkinson, Rosenfeld, Sit et al., 2011; LaNasa, Cabrera, & Trangsrud, 2009; Taub, McGrew, & Witta, 2004). Confirmatory factor analysis is an appropriate method to evaluate construct validity (see Thompson & Daniel, 1996). Confirmatory factor analysis enables researchers to test explicit hypotheses concerning the factor structure of the data. In addition, confirmatory factor analysis offers a more feasible method for evaluating construct validity in contrast to principal components analysis, conducted by Längle et al. (2003).

The goal of the current inquiry is to examine whether Längle's ES is a valid measure of existential meaning. The focus is on the construct validity. The following hypotheses can be formulated. (1) Construct validity is shown by the four-factor structure of the scale at item level, along the lines of the four assumed subscales. (2) Construct validity is shown by the two-factor structure of the scale at item level, reflecting the theory of the personality

factor and the existence factor. (3) Construct validity is shown by a one-factor structure of the scale at item level, in accordance with the assumed mutual dependence between the four subscales.

Method

Participants and Procedure

The study uses data from four surveys conducted in the Netherlands on the correlation between existential meaning and burnout. The four samples consisted of professionals working in "social occupations" that require frequent and extensive contact with people. With regard to sample 1 we randomly selected 300 teachers of primary schools from a district in the middle of the country and asked them to participate in our study (Tomic, Evers, & Brouwers, 2004). In total 215 surveys were returned, resulting in a response rate of 72%. The number of male teachers was 44 (20.5%) and the number of female teachers was 171 (79.5%). The mean age of our respondents was 39.46 whereas the national mean age of primary school teachers is 40.49. There was no significant difference concerning the variable "age" of the 215 respondents and the total population of teachers: $t(1309) = 1.38$, $p = .09$, $\eta^2 = .002$.

In sample 2 the participants were pastors from orthodox protestant denominations registered as such in the Reformed Church Annual and working in a parish (Loonstra & Tomic, 2005). The total population consists of 480 pastors. 266 pastors participated in the study, a response rate of 55%. The mean age was 45.95 ($SD = 9.06$). There was no significant difference in mean age of respondents (45.95) and the population (46.05): $t(744) = .145$, $p = .44$, $\eta^2 = .000$.

From a target population of social workers 350 were selected randomly, for sample 3 (Aanraad, 2005). The respondents who participated in this study were working for a large city and its surrounding. A total of 192 questionnaires were returned and processed for this study. This is a response rate of 55%. The sample consisted of 50 men (26%) and 142 women (74%). Mean age was 42.44 years with a range of 20 to 63 years ($SD = 9.78$). Mean age of target population was 43.86 ($SD = 8.98$). Considering mean age the sample of social workers does not differ significantly from the target population [$t(539) = .82$, $p = .21$]. $\eta^2 = .001$.

As for sample 4 we randomly selected 1000 school principals across the country (Tomic & Tomic, 2008). 514 principal questionnaires were returned resulting in a response rate of 51.4%; 23.9% respondents were female and 76.1% male. The average age of the principals was 50.2 years ($SD = 6.72$), whereas the national mean age of school principals is 50.5 years. There was no significant difference in mean age of the 514 principals and the total population of principals $t(1512) = .88$, $p = .19$, $\eta^2 = .001$.

All participants were eligible for the four studies. In the four studies response rates range from approximately 51% to 72%, which is not only quite satisfactory for survey research according to Babbie (2006), but also in accordance with the findings of Asch, Jedrziewski, and Christakis (1997).

In the four surveys, participants were asked to perform a self-evaluation by completing a form. In order to increase the response rate, we followed suggestions by Green, Boser, and Hutchinson (1997): We provided respondents with postage-paid envelopes that could be sent anonymously; we sent the questionnaires to the respondents directly; the respondents

could contact us at any time if necessary; and we used a fairly brief questionnaire. After four weeks, a reminder was sent to all addressees.

Measurement Instrument

The ES has been tested as a measure for existential meaning among more than a thousand respondents in Austria, but a confirmatory factor analysis has not been performed. The present study used a Dutch translation of the ES. Two researchers and one German teacher translated the original questionnaire from German into Dutch independently of one another and then produced a consensus version. Obviously, the translators emphasized the meaning of the original items and did not follow the wording of the source language very closely, their aim being to produce a good translation. Three other translators with an excellent knowledge of both Dutch and German and blind to the original questionnaire then performed a back-translation. This version was compared with the original German questionnaire.

The method of back-translation was chosen because it can improve the reliability and validity of research in different languages; the quality of the translation is verified by independent translators translating back into the original language. One important benefit of a back-translation is that it allows comparison of the original source language version and the version that was back-translated into the source language. Back-translation is the most highly recommended technique for translation in cross-cultural research (Maneesriwongul & Dixon, 2004). The results indicate that the ES was successfully translated for use with Dutch teachers, principals, pastors, and social workers.

Data Analysis

The major task in testing confirmatory factor analytic models is to determine the goodness of fit between the hypothesized model and the sample data (Byrne, 1994). The adequacy of model fit was assessed using the chi-square likelihood ratio, the Goodness of Fit Index (GFI), the Root Mean Square Residual (RMR), the Adjusted Goodness of Fit Index (AGFI), the Normed Comparative Fit Index (CFI; Bentler, 1990), the Tucker-Lewis Index (TLI), and the Parsimony Normed Comparative Fit Index (PCFI). Chi-square describes the statistical goodness of fit of the observed matrix compared to the expected matrix predicted by the hypothesized model. A significant chi-square value implies that the hypothesized factor model is not adequate, but it should be mentioned that chi-square is sensitive to sample size. On the one hand, with large samples chi-square values will be inflated and even minor discrepancies can lead to rejection of an in every way adequate model. On the other hand, when samples are small, chi-square value can be non-significant even when the model does not fit adequately (Williams, Hartman & Cavazotte, 2010). Due to the sensitivity of chi-square, it is understandable to employ some sensible indices of fit to supplement evaluation of the proposed model, for instance, the normed comparative fit index (CFI) ranging from 0 to 1.00. A value greater than 0.90 indicates an acceptable fit to the data. The normed comparative fit index (CFI) is based on a comparison of the hypothesized model with the null model (i.e., all correlations between the variables are 0) and is oriented towards sample size. According to Byrne (1994) it is recommendable that CFI should be the main index when evaluating model fit.

Results

In order to test the presupposed factorial structure of the ES, confirmatory factor analysis with maximum likelihood estimation was used utilizing the AMOS computer program (Arbuckle, 1997). In this confirmatory factor-analytic approach, the fit of five factorial models was tested against the null model (Model 0): Model 1, a one-factor model in which all items of the three subscales were allowed to load on one general existential-meaning factor; Model 2, a two-factor model in which the items of the Self-Distance and Self-Transcendence subscales were allowed to load on one factor, whereas the items of the Responsibility and Freedom subscales were allowed to load on a second factor (the two subscales were allowed to correlate); Model 3, a four-factor model in which the items of the four subscales were allowed to load on their respective factors (the four subscales were allowed to correlate); and Model 4, a higher-order-factor model in which the Self-Distance and Self-Transcendence factors were allowed to load on one second-order factor, whereas the Responsibility and Freedom factors were allowed to load on another second-order factor (the two second-order factors were allowed to correlate).

Evaluation of the model fit was based on the chi-square likelihood ratio, the Root Mean Square Residual (RMR), the Goodness of Fit Index (GFI), the Adjusted Goodness of Fit Index (AGFI), the Normed Comparative Fit Index (CFI; Bentler, 1990), and the Parsimony Normed Comparative Fit Index (PCFI). To assess CFI and PCFI, null models were specified, i.e. models in which the variables are mutually independent (Model 0). Following the recommendations of Bentler and Bonett (1980), the fit of a model was considered to be acceptable when CFI exceeded .90. PCFI was used to assess a model's parsimony, which is especially useful when comparing models (Mulaik, James, Van Alstein, Bennett, Lind & Stilwell, 1989).

Table 1: *Overall goodness-of-fit indices for the Existence Scale* (N = 1187)

	χ^2	*df*	RMR	GFI	AGFI	CFI	TLI	PCFI
Model 0	16267.05	1035	.27	.30	.26	.00	.00	.00
Model 1	5046.42	989	.07	.81	.79	.73	.72	.70
Model 2	4938.02	988	.07	.82	.80	.74	.73	.71
Model 3	4799.02	984	.07	.82	.80	.75	.74	.71
Model 4	4789.97	983	.07	.82	.80	.75	.74	.71

Note: RMR: Root mean square residual; GFI: Goodness of fit index; AGFI: Adjusted goodness of fit index; CFI: normed comparative fit index; TLI: Tucker-Lewis index; PCFI: Parsimony normed comparative fit index.

The results of confirmatory factor analysis showed chi-square ratios indicating a poor absolute fit, most likely due to the large sample size. Inspection of the CFI and the Tucker-Lewis Index (TLI), which are relatively insensitive to the sample size (McDonald & March, 1990), indicated that the fit of neither model was adequate (see Table 1).

Discussion

The aim of the current study was to test empirically whether the ES developed by Längle et al. (2003) is a valid measure of existential meaning in life. To our knowledge, this was the first study to test the factor structure of this 46-item version of the ES. The results of confirmatory factor analysis indicated that none of the hypothesis can be confirmed. There is no four-factor structure along the lines of the four assumed subscales (Model 3), nor is there a two-factor structure (Model 2) or a higher-order two-factor structure (Model 4) in accordance with the theorized Personality factor and Existence factor. Confirmatory factor analysis does not suggest a one-factor model as the best fit for the data (Model 1).

A comparison with results of previously conducted studies is not feasible, because there are no comparable studies to our knowledge. Längle et al. (2003) applied factor analysis (varimax rotation) to assess the ES. Their results partially confirm that the ES measures a dimension independent of other factors. Factor analysis revealed one factor that is almost exclusively defined by the four sub-scales of the ES. Unlike Längle et al. (2003), our results did not confirm the four-factor structure.

There may be several reasons why the ES did not show an adequate factorial model fit. First, it seems quite likely that the theoretical basis of ES construct is inadequate, and, second, the construct may have been operationalized inaccurately. There are two indications that the latter may be the case. In order to avoid socially desirable answers, most items are phrased negatively, which may confound the factor differences. Moreover, several items are formulated ambiguously. However, at the moment there are no rigorous reasons to reject the theory.

Having found an inadequately fitted factorial model of the ES in the present study, we have concluded that this instrument, in its current state, is not suitable for obtaining precise and valid information about existential meaning in life. Since existential meaning has enjoyed ample attention in psychological research and practice, it is of great importance to modify the ES or to develop a suitable and valid new measurement instrument.

Like most research, the current study has limitations that merit further discussion. First, in spite of a large sample size, all respondents are from four occupational groups or domains, (i.e., clergy, teachers, principals, social workers) which can influence their perceptions due to its practices and other factors. The respondents in the sample were all employed in occupations that require extensive contact with other people. This can be considered to be a restriction for testing the factorial structure of a scale, in particular. Consequently, we Research suggests that existential meaning is strongly related to human health and well being and that absence of meaning is related to psychopathology (Yalom, 1980). Therefore, it is quite understandable that existential meaning has received renewed attention and that conducting empirical research in this domain is valuable and justified. Despite the limitations, the current study contributed to the knowledge of the Existence Scale meant to measure existential meaning in life. This work is only a first step, and future studies are needed in this area. need to be cautious when generalizing the results

of the current study to the country's population. Further study, for instance, with people in different professions like engineers, scientists, businessmen, laborers is needed to draw a broader conclusion.

Second, the current study's results are based on data gathered in the Netherlands, which was different from the country in which the scale was developed and initially tested. The existential beliefs or cultural differences typical of that country may limit the results to that country or other similar country (i.e., the restriction of the study being conducted in one country makes it difficult to verify results and interpretations with similar studies in other countries). Just as a significant result in one country may or may not generalize beyond its borders, the same goes for non-significant results. Therefore, one should proceed with caution when generalizing results found in the current study to populations in other counties without further research.

In spite of its limitations, the current study has several important strengths. First, the current study ventured into a novel domain of measuring existential meaning. Second, the four samples were drawn randomly from the target populations. Third, the total sample size was substantial (N = 1187). Fourth, the response rates ranging from 51% to 72%, have been found to be quite satisfactory for research in these domains (Asch, et al., 1997; Babbie, 2006; Van Horn & Green, 2009). Fifth, the four samples were representative concerning age of the participants. Sixth, we applied an appropriate data-analytic strategy (i.e., confirmatory factor analysis).

Research suggests that existential meaning is strongly related to human health and well being and that absence of meaning is related to psychopathology (Yalom, 1980). Therefore, it is quite understandable that existential meaning has received renewed attention and that conducting empirical research in this domain is valuable and justified. Despite the limitations, the current study contributed to the knowledge of the Existence Scale meant to measure existential meaning in life. This work is only a first step, and future studies are needed in this area.

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